

## 4.

## A Revision of the Family Nectariniidae (Sunbirds).

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(Text-figures 1-14).

The members of the family Nectariniidae, the sunbirds, constitute one of the best characterized and most uniform groups among passerine birds. All are well adapted to their special mode of life, centering about flowers, on the nectar of which they feed as well as on the small insects attracted by them.

Sunbirds are by no means the only birds with such habits. The American hummingbirds (Trochilidae) are even more highly specialized in the same direction. Although far apart systematically—the Trochilidae belong to the Picarian order—and very different anatomically, sunbirds and hummingbirds show a further similarity in the brilliant metallic plumage worn by many species, especially the males. When the feathers are carefully examined, however, their gloss is found to be of a different character; so even this resemblance between the two families is superficial. They likewise differ so greatly in form, the hummingbirds having long, pointed wings and tiny feet, that even a layman will quickly learn to distinguish between them. Sunbirds, of course, are restricted to the Old World; hummingbirds to the Americas.

Some other passerine birds also feed partially or entirely flowers, notably the family Meliphagidae or honeyeaters, which inhabit the Australasian and Pacific regions, with one genus, *Promerops*, in South Africa as well. In general structure the Meliphagidae differ considerably from the Nectariniidae, particularly in the tongue. An important paper on the subject by Hans Scharnke will be found in the *Journal für Ornithologie*, LXXX, 1932, pp. 114-123. A translation of the part concerning the sunbirds (pp. 115-117) is as follows:

"I have examined the following species:

*Chalcostetha chalcostetha*, *Aethopyga siparaja*, *Aethopyga flavostriata*, *Cinnyris sericea*, *Cinnyris flammaxillaris*, *Cinnyris jugularis frenata*, *Cinnyris jugularis ornata*, *Cinnyris asiatica*, *Arachnothera flaviaaster*, *Arachnothera chrysogenys*, *Arachnothera affinis modesta*, *Arachnothera longirostra*, *Anthreptes malaccensis*.

"The tongue of the Nectariniidae has a tubular shape only in its terminal two-thirds. The basal third is flat. The channel through which the nectar passes into the esophagus is formed by the turning up of the edges of the tongue until they meet in the midline. In the posterior part of this tubular section the rolling up is halted when the two edges touch the midline. This results in the formation of a single tube. Farther in front, the rolling up continues until two separate tubes are formed which lie side by side. How this operates can be visualized easily, if one takes a sheet of paper and rolls it up equally from the right and from the left until two parallel rolls are formed.

"The horny wall of this tube is formed only by the ventral part of the original tongue, as Moller showed in cross sections, and as is also the case in the Meliphagidae. The degeneration and gradual disappearance of the dorsal wall of the tongue can be observed well under the binocular.

"The two tubes of the tongue, which are closely attached along most of their length, are separated at the tip. This separation is caused in the above-listed species of *Chalcostetha*, *Cinnyris* and *Anthreptes*, by a ventral break along the midline, which permits the two tubes to become independent of each other. This permits the two new ventral edges of either side to roll upward until they meet the free dorsal edge. In this manner two complete separate pipes are formed.

"The tip of the tongue is formed quite differently in the species of the genera *Aethomyza* and *Arachnothera* examined by me. Their tongue agrees otherwise with that of the other species of Nectariniidae, but at the tip there is not a single median split, but rather two lateral ones. This produces two structures more groove-like than tubular, separated by an unpaired, flat, ventral centerpiece. The function of this piece may be to lie against the grooves in order to make them serve as pipes."

The sunbirds, in my opinion, are most nearly related, though not very intimately,

TEXT-FIG. 1. Tongue of *Nectarinia jugularis frenata*.  
× 4.

TEXT-FIG. 2. Tip of tongue of *Nectarinia jugularis frenata*. × 23.

TEXT-FIG. 3. Tip of tongue of *Aethopyga siparaja flavostriata*. × 27.

TEXT-FIG. 4. Tongue of *Promerops cafer*. × 2.

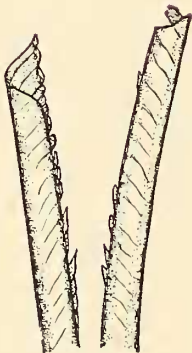
TEXT-FIG. 5. Tip of tongue of *Promerops cafer*. × 17.

TEXT-FIG. 6. Tip of tongue of *Myzomela sclateri*. × 10.

Text-figs. 1 to 6 after Scharnke.



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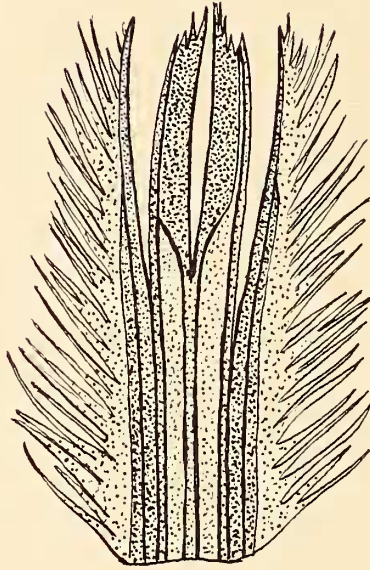
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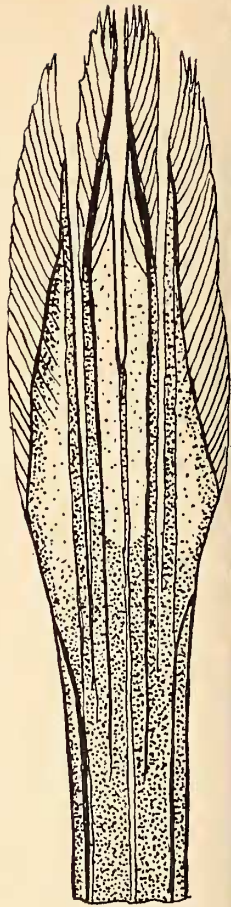
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to the Dicaeidae or flower-peckers, which inhabit tropical Asia, Malaysia and Australasia. These small birds are much less specialized than sunbirds, and have short bills, thin and curved only in some species; a few exhibit glossy feathering. Their tongues have a similar structure in general.

The Dicaeidae are less exclusively nectar- and insect-eaters. They feed principally on small berries, particularly on those of the various tropical mistletoes (*Loranthus*) amid which they are often found. Both sunbirds and flower-peckers have strong legs, short toes and sharp claws. An important point is that members of both families generally build elaborate, hanging, purse-shaped nests, although some aberrant Australian flower-peckers (*Pardalotus*) nest in holes.

On the other hand, the Dicaeidae are certainly allied to the so-called titmice of the *Remiz* group, which build pendulous nests, and through them to the long-tailed tits

(*Aegithalos* and allies). A small Himalayan bird, *Cephalopyrrhus flammiceps*, may provide a link between them. The only example I have ever seen alive, in Upper Laos during 1938, looked and behaved so like a *Dicaeum* that I mistook it for one until it had been collected. Examination in the flesh confirmed my impression of its affinities. *Cephalopyrrhus*, to be sure, nests in holes in trees; but since a few Dicaeidae have similar habits, this is no bar to placing it among them. I may state here that I consider *Remiz*, *Aegithalos* and allied forms too different from *Parus* and related genera for their inclusion in the family Paridae. They well deserve further study and revision.

The Nectariniidae and the *Remiz-Aegithalos* group of titmice all have ten conspicuous primaries in the wing, while many Dicaeidae have a minute and partly concealed first primary. As I have said when revising other families, I do not attribute any great importance to the reduction of the first primary.

The Zosteropidae, or white-eyes, likewise resemble the sunbirds, though less markedly. They form a compact group, well represented throughout the tropics of the Old World, and must have become differentiated at an early stage.

The suggestion has been made by Shelley ("The Birds of Africa," 1900, vol. II, p. 12) that *Neodrepanis* may be related to *Philepitta*, another Madagascan genus. He bases his statement on a certain similarity in colors and on the presence of an eye-wattle in the male. Such a relationship seems improbable, since *Philepitta* belongs to the Mesomyodian Passeres. The two species of *Philepitta* have brushy tongues, their bills are short and the size of the birds is much larger than that of any of the sunbirds. In habits, moreover, they have little in common. I do not agree with Bates' suggestion that the *Hylia prasina* may be a close relative of the sunbirds.

If we consider the Nectariniidae as a whole, we find that the family exhibits certain definite characteristics. It consists of small to very small passerine birds with long, thin, curved bills that in most genera show varying degrees of serration. I have examined under the microscope the bills of all the species represented in the American Museum of Natural History. The nostrils are oval, placed in a groove, and covered by an operculum. The tongue is tubular in its anterior two-thirds and split near the end; the "horns" of the hyoid apparatus are very long and well adapted to the protrusion of the tongue. Rictal bristles are wanting. The tarsus is strong and scutellate; the toes are short and stout, with sharp nails. The rounded wing has ten primaries; the third

to fifth are longest and the first is usually much reduced. The tail of twelve rectrices is square, rounded or graduated; the two central feathers are narrow and lengthened in the males of several species. The plumage is generally bright, metallic, and sometimes velvety in the males; it is usually dull in females. In the genus *Arachnothera*, and in several primitive species of *Nectarinia* and *Anthreptes*, metallic colors are absent, and both sexes are similar or only slightly different. On the other hand, the females of a small number of species of *Anthreptes* and *Nectarinia* have partly metallic plumage either similar to that of the males or a little less elaborate. In those that have no metallic colors, juvenile birds resemble females.

The males of a certain number of species have a dull off-season or eclipse plumage which replaces their brilliant dress after the breeding season. This must be a recently acquired character, and need not indicate close relationship, for it varies in closely allied forms. Males of many species, and females of some, possess bright pectoral tufts of lengthened, fluffy feathers, erectile during display and varying from yellow to red. They too are of slight systematic significance.

All sunbirds build the same type of long, purse-shaped nest, hanging from a bough or leaf of a tree, less often placed in a bush. It is more or less elaborate and generally provided with a porch-like projection above its lateral entrance. The eggs are always spotted or blotched, usually numbering two, sometimes more.

Sunbirds have sharp, metallic voices, and some sing fairly well. They are active and sprightly. Although many individuals, of several species, may gather in flowering trees, they are not truly sociable and males are extremely pugnacious in the nesting season. They inhabit primeval forests, park-like country, or dry jungle. A number of species have become familiar garden-dwellers; a few live only on high mountains. In general, and particularly in Africa, the very brilliant species are found in the more open situations, and only the duller ones may inhabit the shady, heavy forest.

In the present revision I recognize 106 species of sunbirds, distributed over the Ethiopian, Indo-Malayan and parts of the Australian regions. One species, *Nectarinia osea*, reaches Palestine and southern Syria; another, *Aethonyaa gouldiae*, ranges as far north as central China. The latter migrates somewhat to the south in winter; otherwise most sunbirds make only local seasonal movements in search of flowers.

In such a compact family group only a small number of genera can properly be distinguished. Two Asiatic-Malaysian groups

are readily separable from all others by the distinctive structure of their tongues, and from each other by their bills and feet, as well as by the texture and pattern of their plumage: *Arachnothera* (9 species) and *Aethopyga* (13 species). The two species of *Neodrepanis* inhabiting the forests of eastern Madagascar are well characterized, too, by the large wattle surrounding the eye of males during the breeding season, and by their distinctive first primary, long and falcate.

It is difficult to group the remaining 82 species satisfactorily. The various characters, often not clear-cut, are combined in so many ways that I find it impossible to recognize more than two generic groups.

These characters, in the order of their importance, are as follows: length and form of bill, texture and pattern of plumage in both sexes, shape of tail, and pectoral tufts. Most of them cannot be used for generic division, as has too often been done thus far; but the comparative shortness and thickness of the bill does permit the placing of 16 species in the rather composite genus *Anthreptes*. This group undoubtedly represents a less advanced stage in specialization. All the remaining species (66) must be included in the large genus *Nectarinia*, with the bill thin, curved, and always longer than the head. Within both these genera, however, the bill varies greatly, often even among the races of a single species.

While the majority of species are easily referred to *Anthreptes* or to *Nectarinia*, a few are somewhat intermediate and offer difficulties. Such is the case with *Anthreptes reichenowi* and *A. anchietae*, in which the bills are rather long and thin for the genus, and with *Nectarinia seimundi*, often considered an *Anthreptes*, but in reality the most primitive member of *Nectarinia*. The case of the peculiar species *hypogrammica* is still more puzzling. Some of its subspecies (*lisetae*, for example) have the bill decidedly long as in *Nectarinia*, while in the nominate race it is shorter and could be regarded as that of an *Anthreptes*. The very special color pattern, general form and behavior have led me, however, to refer it to *Nectarinia*, with some misgivings.

Like other passerine families, the sunbirds have usually been studied not as a whole, but according to geographic distribution. Even Shelley, author of a very good monograph (1878), and Gadow (Cat. Birds Brit. Mus., Vol. IX, 1884) did not always appreciate the true affinities of the species of *Nectarinia*. In more recent years there has been a turn for the worse, and a number of unnecessary genera have been named and accepted.

The first cause of confusion was the unhappy custom of considering the shape of

the tail (square, graduated, or with elongated central rectrices) to be of generic importance. Yet this character was not even used consistently. No one, for example, has ever proposed the separation of *regia*, a species with graduated tail, or of *graueri*, a subspecies with such a tail, from their evident allies with square or rounded tails. The most specialized forms in many groups tend to develop a long, ornamental tail independently. The same progress is illustrated in the genus *Aethopyga*. Lengthened tails are found in numerous forms which otherwise show no great similarity in the plumage pattern of the two sexes, and which on the contrary are clearly related to different short-tailed birds.

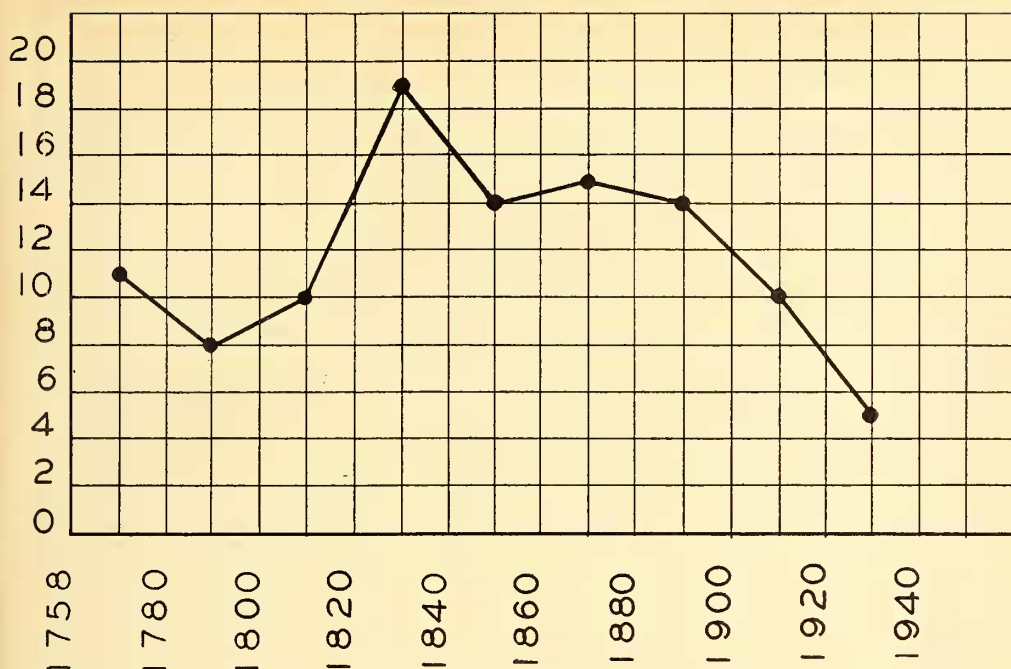
This observation disposes immediately of several genera currently recognized: *Cinnyris*, *Anthobaphes*, *Dreptes*, *Anabathmis* and *Chalcostetha*, all based merely on the shape of the tail. They must all be placed in the genus *Nectarinia*. It also permits us to consider the birds usually placed in the genus *Hedydipna* as an extremely specialized species of *Anthreptes*, and likewise *Eudrepanis* and *Urodrepanis* synonyms of *Aethopyga*.

The numerous species of the genus *Nectarinia* are distributed throughout the range of the family. *Nectarinia* differs from *Arachnothera* and *Aethopyga* in the structure of the tongue, from *Anthreptes* in having the bill longer than the head, from *Neodrepanis* by the absence of a wattle around the eye and the shortness of the first primary. It is possible, however, to base minor divisions of *Nectarinia* upon the pattern of the plumage; yet such groups are linked by intermediates in such a way that lines of division are hard to draw. They can only be considered as subgenera.

In the present study, as in previous revisions of other groups, I shall not attempt to review critically all of the subspecies, or their exact distribution. When necessary, I shall give briefly my reasons for their regrouping. The sequence of the species is perforce artificial, and the Text-figures will convey a better idea of their true relationships.

The number of genera has been reduced to 5, that of the species to 106, a conspicuous simplification and, I hope, an improvement on the systems previously adopted by other authors. Again, I consider as subspecies of one species all forms which differ only in degree of pigmentation or of proportion, and which replace one another geographically. Complete inter-gradation between races I do not regard as essential.

My work has been based on the large and excellent series in the collection of the American Museum of Natural History, under the care of Dr. Robert Cushman Murphy. Doctors James P. Chapin and Ernst



TEXT-FIG. 7. Dates of description of the 106 species of sunbirds recognized in the present list.

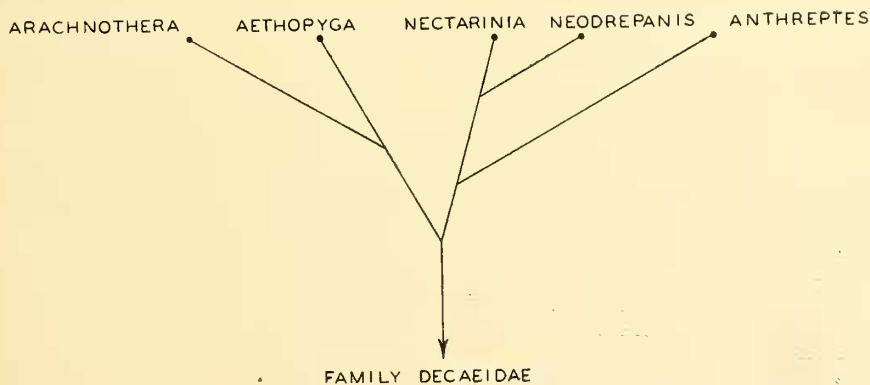
Mayr have as usual been of the greatest help, and have kindly read my manuscript. I thank them most sincerely.

My experience with sunbirds in life has been extensive. I probably have kept more species in captivity than any other aviculturist; and I have collected and observed many forms in the wild state, including a number not previously described, mostly in Indo-China but also in India, in Madagascar and in various parts of Africa. This should justify my endeavor to revise the family in the light of recent researches.

### I. GENUS *Anthreptes*.

Tongue ending in two half-cylindrical lobes. Bill slightly curved, equal to the head or shorter. Nasal operculum naked. Mandibles finely serrated or only roughened. First primary short. Both sexes sometimes with metallic colors, or both without; or males with, and females without. Pectoral tufts present in all males except in *gabonica* and *platura*, less often in females.

The plainest species, *gabonicus*, is olive brown above, whitish below, with a pale



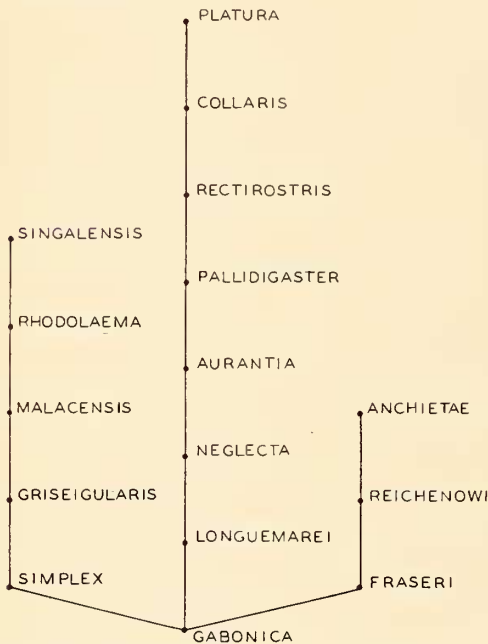
TEXT-FIG. 8. Genera of the Family Nectariniidae.

eyebrow; it probably represents the most primitive sunbird now existing. Other species can be divided into three groups: two African and one Indo-Malayan, as shown in the diagram. The less specialized forms of each group have a duller plumage and a longer tail. In the most elaborate species, *platura*, the two central rectrices of the male in breeding plumage are narrow and greatly elongated.

With the exception of two species (*gabonicus* and *fraseri*) all males show metallic colors. Except in *reichenowi*, *rectirostris* and *platura*, the females of all other African species have some metallic feathers, differing only slightly from the males in several cases.

In all the Indo-Malayan species, males have metallic feathering but females have none. In *simplex*, however, the metallic purple-blue is reduced to the forehead of the male.

*Anthreptes* is found over most of the range of the family, from Africa to the Philippines and Celebes. Some of the species inhabit rain forest, others, dry jungle and gardens.



TEXT-FIG. 9. Species of the Genus *Anthreptes*.

1. *A. gabonicus*. Brown Sunbird. Gambia to the Lower Congo, on the coast.
2. *A. fraseri*. Scarlet-tufted Sunbird. Upper Guinea to eastern Belgian Congo and Uganda.
3. *A. reichenowi*. Gunning's Sunbird. Coast of Kenya Colony to Portuguese East Africa (lower Zambesi Valley).

4. *A. anchietae*. Anchieta's Sunbird. Angola to Northern Rhodesia and Mozambique.
5. *A. simplex*. Plain-colored Sunbird. Malay Peninsula, southern Burma and peninsular Siam; Sumatra, Borneo, Nias and Natuna Islands.
6. *A. griseigularis*. Gray-throated Sunbird. Philippine Islands.
7. *A. malacensis*. Brown-throated Sunbird. Southern Burma, Siam and Indo-China; Malay Peninsula, Sumatra, Java, Philippines, Celebes and neighboring islands.
8. *A. rhodolaema*. Rufous-throated Sunbird. Tenasserim, Malay Peninsula, Sumatra, Borneo.
9. *A. singalensis*. Ruby-cheeked Sunbird. Burma, Indo-China, Siam, Malay Peninsula, Sumatra, Java and neighboring islands.
10. *A. longuemarei*. Violet-backed Sunbird. Savannas of the Ethiopian region from Senegal to Abyssinia, south to Angola, Mashonaland and Portuguese East Africa.
11. *A. neglecta*. Uluguru Sunbird. Eastern Tanganyika Territory.
12. *A. aurantium*. Blue-backed Sunbird. Forested Cameroon, Gaboon and Belgian Congo.
13. *A. pallidigaster*. Moreau's Sunbird. Northeastern Tanganyika Territory.
14. *A. rectirostris*. Shaw's Sunbird. West Africa, from Gambia to Fernando Po and the Congo, Uganda and Usambara in Tanganyika Territory.
15. *A. collaris*. Collared Sunbird. The greater part of the Ethiopian region from Senegal and Kenya Colony south to eastern Cape Province.
16. *A. platura*. Pygmy Long-tailed Sunbird. Senegal, east across the Sudan to Philae on the Nile, Abyssinia, Eritrea, Somaliland and southwestern Arabia, south to the northern Congo and northern Uganda.

#### NOTES:

*A. axillaris*, from Uganda and the Belgian Congo, is certainly conspecific with *fraseri* from Fernando Po and West Africa, differing only in its gray instead of olive head.

*A. yokanae* Hartert (*Bull. B.O.C.*, XLI, 1921, p. 63, Rabai, N. of Mombasa) is either identical with or a very indistinct race of *A. reichenowi* Gunning (*Ann. Transvaal Mus.* 1, 1909, p. 173) from the lower Zambesi Valley, Portuguese East Africa. I could not examine the latter, but Grant and M. Praed share my opinion (*Bull. B.O.C.*, LXIV, 1943, pp. 11-12).

*A. griseigularis*, *A. malacensis* and *A. rhodolaema*, although very similar, must be considered separate species, as two of them coexist in many localities of Malaysia and the Philippines.

*A. singalensis* is certainly related to the three preceding species, which it closely recalls in its plumage pattern. But it appears to be a regressive species in that its bill is particularly short, almost straight, and devoid of real serrations, the edges of both mandibles being only roughened. I do not think, however, that such a character warrants the separation of this species in a special genus (*Chalcoparia*), even less in a special family, as Stuart Baker proposed (Fauna of Br. India: Birds, III, 1926, p. 368). It is much too near other *Anthreptes* in every other way. Serration is very variable in sunbirds, as the microscopic examinations of many hundreds of specimens has convinced me. It is fairly constant in each species, but only within certain limits. It can differ in closely allied forms. Such a character cannot therefore have much taxonomic meaning. A similar state of things is found in the African species of *Pycnonotus* of the subgenus *Andropadus* (cf. Revision of the Pycnonotidae, *Zoologica*, XXVIII, 1943, p. 18) to a much higher degree. All other species of *Anthreptes* have weak serrations, sometimes almost invisible, particularly in some specimens of *platura* and *malacensis*. The peculiar sunbirds of the genus *Neodrepanis*, long said to lack serrations, have in fact none on the upper mandible, but some very small ones on the lower. For all these reasons I include *singalensis* in the genus *Anthreptes*. I never found, as Stuart Baker asserts, that it differs in any way in habits from other sunbirds.

The question of the Violet-backed Sunbirds in East Africa has been discussed by J. Vincent (*Ibis*, 1936 pp. 72-74) and by R. E. Moreau (*Ibis*, 1937, pp. 335-337). It seems that the best solution is to recognize *A. neglectus*, in which the female possesses an entirely metallic mantle, as a full species, and to consider all other forms, including *orientalis*, as subspecies of *A. longuemareii*. It does not seem probable that the ranges of any of them really overlap. If they do, *orientalis* will have to stand as a full species.

I have not been able to examine specimens of *A. pallidigaster*, but from its description it seems to be not very far from *A. aurantia*.

*A. tephrolaema* is certainly a southern race of *A. rectirostris*, only with less yellow pigment.

*A. platura* is the most specialized species of the genus, but is fairly closely related to *A. collaris*, as shown by the color pattern of the males. The bill is very short and only

indistinctly serrated. As it is found in other genera of sunbirds (*Nectarinia* and *Aethopyga*), the lengthening of the tail of the male is but an extreme specific differentiation. *A. metallicus* is merely an eastern race of *platura*, with the purplish-blue color appearing on the breast and extending farther on the back.

## II. GENUS *Nectarinia*.

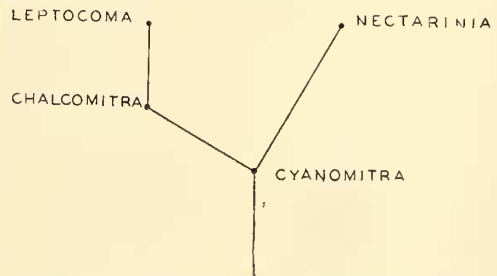
This genus, by far the largest of the family, differs from *Anthreptes* mainly in its longer and more curved bill. It is therefore more highly specialized and, containing a far greater number of species, it includes forms of more varied and elaborate color pattern. On the whole, however, it follows closely the same variations as *Anthreptes*.

In the majority of species the nasal operculum is naked, but in a small group it is covered to a varying degree with short metallic feathers like those of the forehead. The bill is always serrated, but more or less finely and deeply. It varies greatly in length and curvature, even in subspecies of the same species.

In the more primitive forms both sexes are dull and alike, as in *Anthreptes*. Only in a few slightly less primitive ones, females show metallic colors like the males, or are slightly duller. But in all the more advanced species which form the very great majority, males always possess metallic colors, while females lack them.

In *Nectarinia* the tail varies from short and square, with or without elongated central rectrices, to strongly graduated. Its length often varies greatly among races of the same species.

As I have noted above, it is possible to distinguish four subgenera in the genus *Nectarinia*; and in the larger of them, we can group species for practical purposes according to the plumage pattern of both sexes. The adoption of these minor groupings makes it easier to understand the particular relationships of a large number of species which, however, are not sufficiently differentiated to be considered as forming genera.



TEXT-FIG. 10. Subgenera of *Nectarinia*.

Subgenus *Cyanomitra*.

This subgenus is composed of primitive species which have several characters in common. The plumage of the more generalized forms is olive all over, darker above; then gradually there appear yellow or red pectoral tufts, metallic fringes to some feathers, and finally patches of metallic colors. But these solid patches are always dark purplish-blue or green, and they are confined to the head, throat and upper breast, one aberrant species of uncertain status (*hypogrammica*) showing purplish-violet on the nape and upper tail-coverts. Except for pectoral tufts, the only bright non-metallic color present is yellow; but brown, gray and olive are always dominant.

In the majority of species, females resemble males, but in four (*hypogrammica*, *hartlaubi*, *newtoni*, *cyanolaema*) they are almost as strikingly different as in the other subgenera. In *verticalis*, the female also differs from the male, but retains a metallic cap. These better evolved species resemble some of the more advanced groups. *N. cyanolaema*, although close to *verticalis*, plainly recalls *N. (Chalcomitra) fuliginosa* in both sexes, while *N. hartlaubi* and *N. newtoni* are not very far from *N. (Nectarinia) dussumieri* and *N. (N.) jugularis*. In the majority of species of *Cyanomitra*, however, the bill is proportionately coarser, broader and deeper at the base. But it never is so thickened as in *Anthreptes*. Pectoral tufts are present in males, except in those of *seimundi*, *batesi*, *hypogrammica*, *hartlaubi*, *newtoni* and *thomensis*. Females of *ursulae*, *verreauxi*, *reichenbachi* and *oritis* are also tufted. In *olivacea*, they have tufts or not, according to the subspecies.

All species of the subgenus *Cyanomitra* are African, with the exception of one from Socotra and one from Indo-Malaysia.

1. *N. seimundi*. Little Olive Sunbird. Liberia to Fernando Po, east to Uganda.
2. *N. batesi*. Bates's Sunbird. Fernando Po, southern Cameroon, and Belgian Congo.
3. *N. olivacea*. Olive Sunbird. Practically the whole Ethiopian region, in forests.
4. *N. ursulae*. Little Mouse-colored Sunbird. Fernando Po.
5. *N. verreauxi*. Mouse-colored Sunbird. South and East Africa, from eastern Cape Colony to Lamu Island.
6. *N. balfouri*. Socotra Sunbird. Socotra Island.
7. *N. hypogrammica*. Blue-naped Sunbird. Burma, Siam, Indo-China, Malay Peninsula, Sumatra, Natuna Is., Borneo.

8. *N. reichenbachi*. Reichenbach's Sunbird. West Africa, from Gold Coast to Gaboon and western Belgian Congo.
9. *N. hartlaubi*. Principé Sunbird. Principé Island.
10. *N. newtoni*. Newton's Sunbird. São Thomé Island.
11. *N. thomensis*. São Thomé Sunbird. São Thomé Island.
12. *N. oritis*. Western Blue-headed Sunbird. Highlands of Fernando Po and Cameroon.
13. *N. alinae*. Blue-headed Sunbird. Ruwenzori and mountains of the Kivu District.
14. *N. verticalis*. Green-headed Sunbird. Senegal to the Congo, Uganda, southwestern Tanganyika Territory and Nyasaland.
15. *N. cyanolaema*. Blue-throated Sunbird. West Africa from the Gambia and Fernando Po, east of Uganda.

## NOTES:

*N. seimundi* is undoubtedly the most primitive species of the genus, and one of the most primitive of the family. It has been considered an *Anthreptes*; but on account of its slender, rather long bill, of its similarity to *N. batesi*, and of its striking differences in proportions from the primitive *Anthreptes gabonica* and *A. fraseri*, it is preferable to place it in the present genus.

*N. batesi*, which is found in the southern Cameroon alongside *N. seimundi*, is so similar as to be difficult to distinguish. However, it has a slightly longer and more curved bill, is a little deeper in color, and the inner parts of its rectrices are darker. This is another case of two very closely allied species living in the same territory.

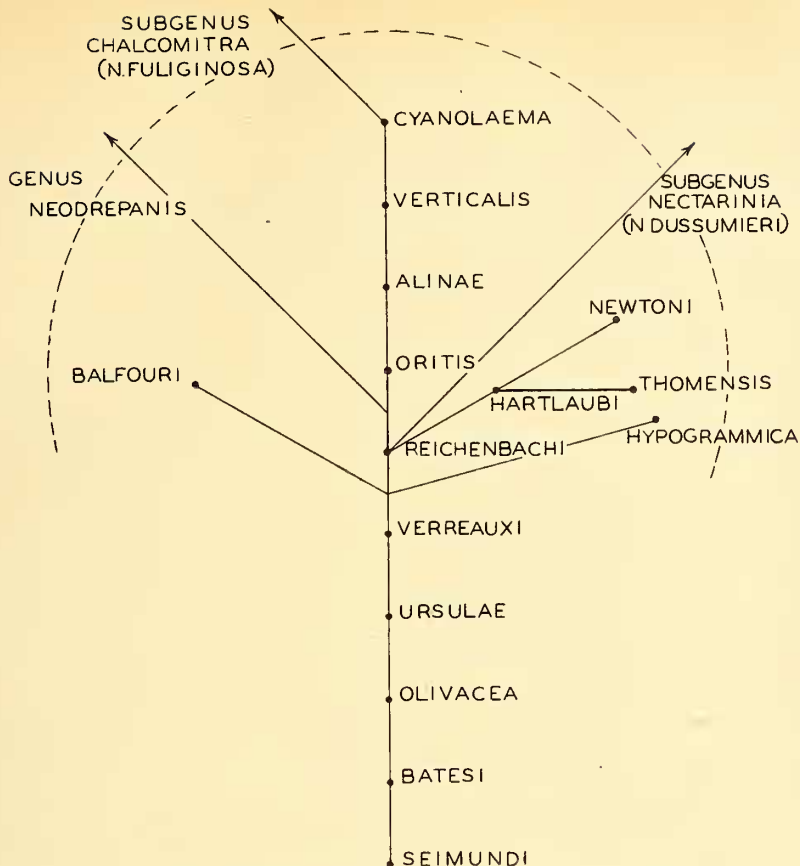
*N. ursulae* is an island representative of *N. verreauxi*, much smaller and approaching *olivacea* in its greenish back. I consider it a full species.

[The spelling of *verroxi*, being evidently an error in transcription of Verreaux's name, must be altered to *verreauxi*.]

*N. hypogrammica*, as stated before, is a very puzzling species, not closely related to any other. The place given it here is purely tentative. Because of its general coloration and of its apparently primitive nature, it fits better in *Cyanomitra* than in any other subgenus.

*N. balfouri* is also peculiar in its pale gray, streaked and spotted plumage, but the dark marks of its feathers seem to represent an alteration of a metallic pattern through adaptation to desert conditions. It is not really very different from other forms of *Cyanomitra*.





TEXT-FIG. 11. Species of the Subgenus *Cyanomitra*.

*N. hartlaubi* and *N. newtoni* are island representatives of *N. reichenbachi*, but they show further specialization in the very different plumages of the two sexes. They recall the color pattern of *N. jugularis*, from the Indo-Malayan-Australian regions.

*N. thomensis*, remarkable for its large size, long graduated tail and purple-edged plumage, represents a much transformed offshoot of the same group, the product of an early invasion. *N. newtoni*, very small and different in pattern, is probably a later invader of São Thomé which has evolved in an opposite direction.

The last four species: *oritis*, *alinae*, *verticalis* and *cyanolaema*, show a gradual evolution toward the more advanced groups.

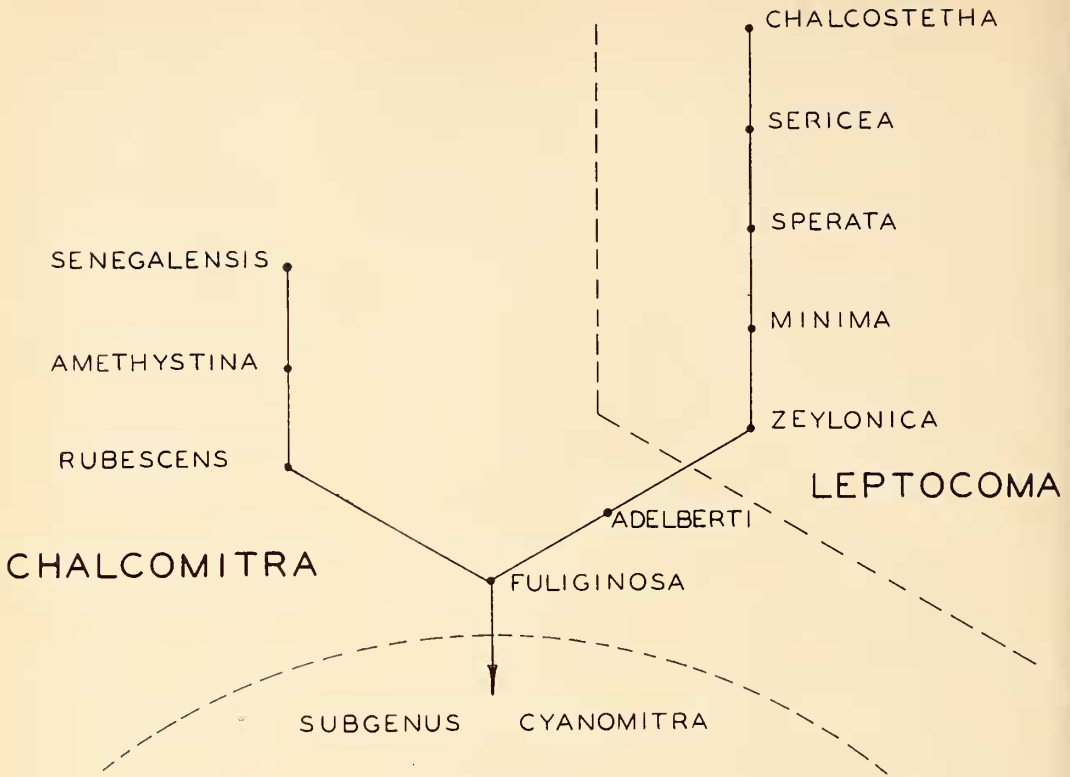
Subgenus **Chalcomitra**.

The sunbirds of this group are easily distinguished from all others by their rather long bill, short, square tail, long body, and by the general velvety brown or black color of their plumage. Metallic colors are confined to the crown, throat and chest, wing

and upper tail-coverts. Females are rather dark, with mottling or stripes on the breast. According to climatic conditions, they may or may not be tinged with yellow underneath. The nasal operculum is naked. The most primitive species, *fuliginosa*, has yellow pectoral tufts, in the male only. All five species are African.

16. *N. fuliginosa*. Carmelite Sunbird. West Africa from Senegal to the western Congo.
17. *N. rubescens*.\* Green-throated Sunbird. Fernando Po, Cameroon, Gaboon and N. Angola to Uganda and Kavi-rondo.
18. *N. amethystina*. Amethyst Sunbird. Southern and eastern Africa from Cape Province to Angola, northeastern Uganda and Lamu Island.
19. *N. senegalensis*. Scarlet-chested Sunbird. Savannas of the Ethiopian region, from Senegal to Eritrea and Somaliland, south to Natal.

\* Replaces *angolensis* auct.



TEXT-FIG. 12. Species of the Subgenera *Chalcomitra* and *Leptocoma*.

20. *N. adelberti*. Buff-throated Sunbird.  
West Africa, from Senegal to Nigeria.

NOTES:

The five species of the subgenus *Chalcomitra* are closely connected. The first three are certainly closer together than the other two, but still represent separate species.

The range of *N. senegalensis* covers practically all the suitable parts of the Ethiopian region. Its subspecies vary in their size, in the depth of their general color, going from smoky brown to black, in the tone of the scarlet of their chest, where the metallic blue middle bar of the feathers is more or less visible, and in the shade and extent of their metallic patches. These are confined to the crown, moustachial streaks, chin and upper throat in the majority of subspecies, but in others: *gutturalis*, *cruentata*, *hunteri*, the lesser wing-coverts are bright violet, and in the last-named, the rump and upper tail-coverts as well. Similar variations are found in *N. amethystina*. *N. cruentata* is merely the Abyssinian subspecies of *senegalensis* differing from the others in its black chin, and from most of them in its violet lesser wing-coverts, similar to those of *gutturalis*. *N. hunteri*, found in Somaliland

and the drier parts of southern Abyssinia and Kenya, west to northeastern Uganda, is also a subspecies of *senegalensis*, as its territory does not seem to overlap with that of any others. It differs most from *cruentata* in being blacker, in having the posterior part of the green crown shading into violet, the rump and upper tail-coverts violet blue, and in lacking the blue middle band to the scarlet feathers of the middle of the breast.

*N. adelberti*, a rare species, shows a definite affinity in its color pattern to *N. zeylonica* and so links this subgenus with the following one.

Subgenus *Leptocoma*.

This Indo-Malayan group of sunbirds is certainly related to the African *Chalcomitra*. Like them, the members have a great deal of velvety feathering, brown, black, or even red. Their metallic colors, never extensive, are confined to the crown, throat, upper breast, lower back, wings and tail, reaching the lower breast only in the most specialized species. The mantle and sides of the head are always velvety. They differ from *Chalcomitra* in several particulars; they are smaller and shorter; their bills are weaker;

the nasal operculum is covered with small feathers; their tail varies from short and square to rounded or graduated and fairly long.

The females are of a very different pattern, grayish-olive above, uniform yellow below, more or less pure, the throat being usually pale. In the majority of forms the head is gray and the throat white. Only one species (*N. chalcostetha*) shows pectoral tufts, in the male.

Sunbirds of the subgenus *Leptocoma* range from India and Ceylon to the Philippines, Celebes, the Moluccas, New Guinea and the Bismarck Archipelago.

21. *N. zeylonica*. Amethyst-rumped Sunbird. Ceylon and India, north to Bombay, Calcutta and Assam.
22. *N. minima*. Small Indian Sunbird. Ceylon and western India, north to Bombay.
23. *N. sperata*. Van Hasselt's Sunbird. Assam, southern Siam, southern Indo-China, Malay Peninsula, Sumatra, Borneo, Java, the Philippines, Celebes and neighboring islands.
24. *N. sericea*\* Black Sunbird. Celebes, Moluccas, New Guinea and neighboring islands, Bismarck Archipelago.
25. *N. chalcostetha*. Macklot's Sunbird. Southern Burma, Siam and Indo-China; Malay Peninsula, Sumatra, Borneo, Palawan, Java and neighboring islands.

#### NOTES:

We have noted above the relative similarity in general pattern of *N. zeylonica* and *N. adelberti*.

I include in *N. sperata* all the forms usually referred to *N. braziliana*, and I also consider as conspecific *N. grayi* of Celebes. Peters (*Bull. Mus. Comp. Zool.* LXXXVI, No. 2, Nov. 1939, p. 121) had pointed out, quoting Chasen, that *braziliana* and *sperata*, together with *henkei* and *juliae*, constitute one species. The variations of the velvety portions of the plumage from black to maroon above, deep maroon to red and yellow below, with several combinations, are very interesting.

*N. sericea* is near *N. sperata* in its general pattern, but all the velvety parts of its plumage are always pure black. The metallic patches vary in hue with the numerous subspecies. Females are of the usual type, a few having a yellow instead

of a white throat, and an olive head instead of a gray one.

As to *N. chalcostetha*, it is just a long-tailed, more brightly colored form of this group, in which the metallic purple invades the whole breast and yellow pectoral tufts appear. The female resembles closely that of *N. sericea*, differing only in its longer, graduated tail and in its large size. It is a lowland species, common in rubber and coconut plantations.

#### Subgenus *Nectarinia*.

This large group includes all the species in which metallic colors are the most extensive, with no velvety feathers except in two species, *johannae* and *superba*, which have a maroon red band across the breast. The more primitive forms have the upper parts dull olive or brownish-gray, and the metallic color reduced to a purple patch on the throat and breast. It gradually invades the forehead, the crown, the back and the breast, and changes to various shades of blue, green, violet and coppery red, first dark and sombre, becoming brighter until, in the end, almost the whole plumage is glistening with iridescence.

Females are always dull-colored and differ slightly in pattern in the various groups. The strength, weakness, or absence of the yellow pigment varies even among geographical races and depends upon their damper or drier habitat.

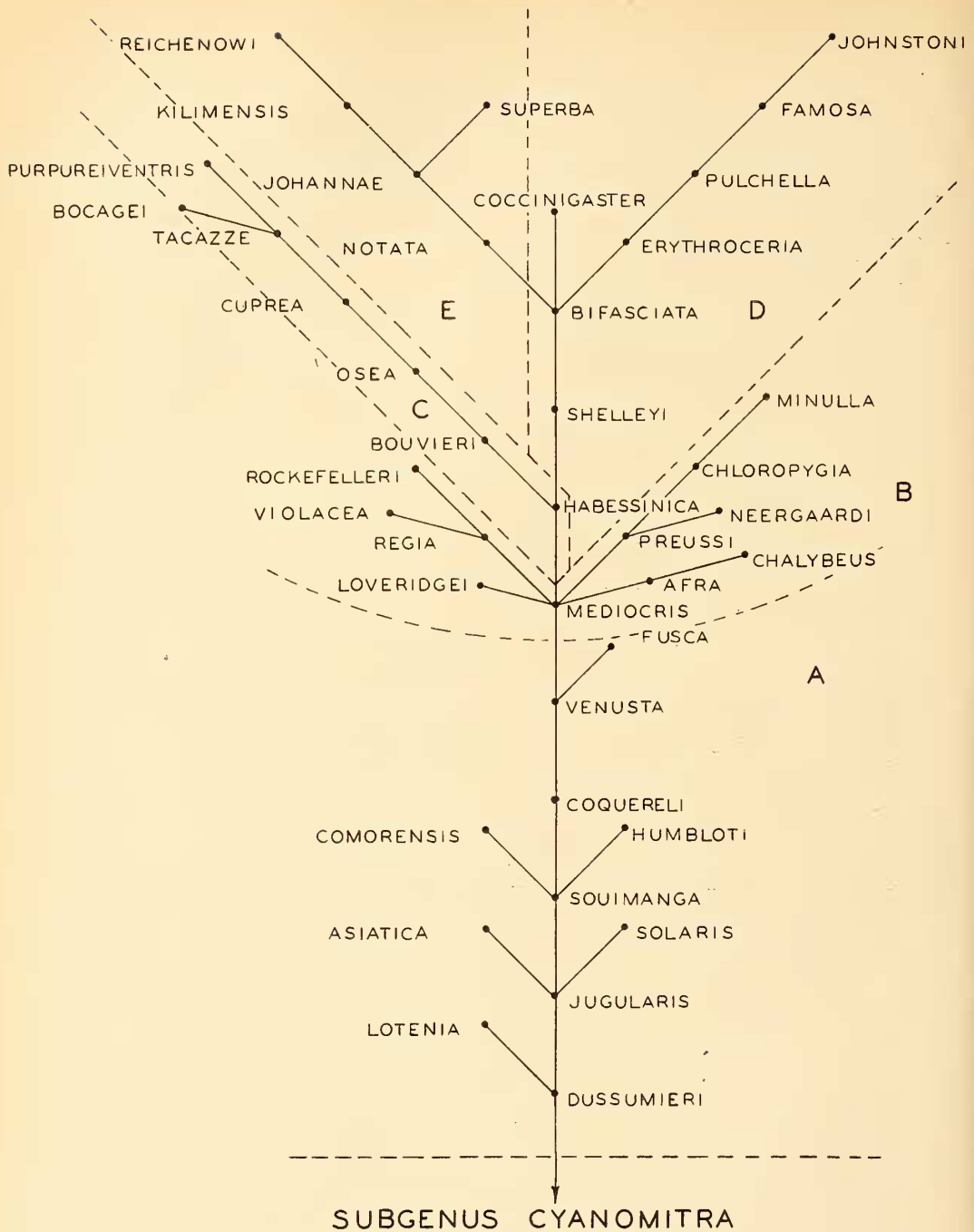
The tail may be short and square, or long, graduated, or with narrow and lengthened central rectrices; there are all sorts of intermediate stages. Long-tailed birds are found in different groups and represent the extremes of evolution in several lines, having no very close connection with one another. Size is variable, as are the length and curvature of the bill. Pectoral tufts are present in males of approximately seven-tenths of the species, never in the females, with the exception of one (*N. johnstoni*). *Nectarinia* occurs throughout the whole range of the family.

#### GROUP A.

Sunbirds of this group are small, square-tailed and the least brilliant of the subgenus. The most primitive males have metallic purple only on the throat and chest, breast gray or yellow and upper parts dull. The most specialized are metallic above and below down to the upper breast; but the colors are always dark, never very bright: purplish violet, copper, steel blue or bronze green. The feathers of the lower breast and abdomen are never shiny, varying from white and yellow to orange, brown and black; the upper tail-coverts are not enlarged.

\* *Nectarinia sericea meyeri* (*Hermitimia meyeri* Sharpe, *Handl. Gen. Sp. Birds*, V, p. 43, 1909), new name for *scapulata* Meyer and Wigglesworth, *Abh. Mus. Dresden*, 1896, p. 16, Celebes (East), is preoccupied by *Nectarinia jugularis meyeri* (*Cinnyris frenata meyeri* Hartert, *Nov. Zol.* IV, p. 156, 1897; N. Celebes).

I propose for it the new name: *Nectarinia sericea wigglesworthi*.



TEXT-FIG. 13. Species of the Subgenus *Nectarinia*.

Females have gray or olive upper parts, light gray or yellow under parts, either uniform or slightly mottled, but never striped or spotted. The males have pectoral tufts, which are absent in females. Species of Group A are found all over the range of the genus.

- 26. *N. dussumieri*. Seychelles Sunbird. Seychelles Islands.
- 27. *N. lotenia*. Loten's Sunbird. Ceylon and Southern India, north to Ratnagiri and Madras.
- 28. *N. jugularis*. Olive-backed Sunbird. Bur-

- ma, Andaman and Nicobar Islands, Siam, Indo-China, Hainan, southern China, Philippines and neighboring islands, Malay Peninsula, Sumatra, Java, Borneo, Lesser Sunda Islands, Celebes, Moluccas, New Guinea and neighboring islands to the Solomon Islands, N. Australia.
29. *N. solaris*. Orange-breasted Sunbird. Lesser Sunda Islands.
30. *N. asiatica*. Purple Sunbird. Afghanistan, Baluchistan, India, Ceylon, Assam, Burma, southern Siam and Indo-China.
31. *N. souimanga*. Souimanga Sunbird. Madagascar, Assumption and Aldabra Islands.
32. *N. humbloti*. Humblot's Sunbird. Great Comoro and Moheli Islands.
33. *N. comorensis*. Anjouan Sunbird. Anjouan Island.
34. *N. coquereli*. Mayotte Sunbird. Mayotte Island.
35. *N. venusta*. Pale-bellied Sunbird. Almost the whole Ethiopian region, from Senegal and Eritrea south to Natal, but not in lowland forests.
36. *N. fusca*. Dusky Sunbird. From the Karroo through southwestern Africa to Benguela.

## NOTES:

The Seychelles sunbird provides a good link between the African subgenus *Cyanomitra* and the birds of the present group, which seem to have expanded first from Africa to the Orient, then returned to Africa via Madagascar. *N. souimanga*, in fact, differs from *N. jugularis rhizophorae*, from Hainan and Annam, only by its metallic green instead of grayish-olive mantle. The crown and underparts are completely similar. On the other hand, *N. humbloti* from Moheli and Great Comoro Islands has the dull mantle of *jugularis*, while the birds from the other two Comoros are much brighter and more saturated in both sexes; they still stem from *souimanga*, and their nearer African relatives are the birds of the widespread species *venusta*. The black abdomen of *comorensis* is no more significant of its relationships than is that of *asiatica*, or of the black-bellied subspecies of *jugularis*.

The white-bellied form of *venusta* in the northeast, *albiventris*, is linked to the yellow and orange-bellied forms (*fazoqlensis*, *falkensteini*, *igneiventris*) through the very pale yellow *blicki*. The intensity of the color depends upon the habitat, turning white in dry districts (Friedmann, *U. S. Nat. Mus. Bull.*, 153, pp. 356-360, 1937). The white-bellied forms of the south and southwest, *talatala* and *oustaleti*, on the contrary, come into abrupt contact with the

yellow-bellied *falkensteini* and *kuanzae*.

The distribution of *oustaleti* remains confused on account of the mention by C. Grant and Mackworth-Praed (*Bull. B.O.C.*, LXIII, p. 70, 1943), of an immature specimen collected by A. M. Chapman at Mwenzo, Northern Rhodesia, the identification of which may not be absolutely certain. So far it had only been found in Angola. It does not seem that *talatala* really coexists anywhere with *falkensteini* (*nyassae*) in Nyasaland and Rhodesia. If this were the case, *N. talatala* would have to be considered a full species, with *oustaleti* as a subspecies. But it remains certain that sunbirds of this whole group are all very closely related.

*N. jugularis* has an extraordinarily wide range, but the conspecificity of all its forms cannot be doubted, even that of the black-bellied forms (*teijsmanni*, *clemenciae*, *keiensis* and *buruensis*) from the Moluccas, Djampea and Kalao. This was proved by the discovery of the black-bellied *N. j. idenburgi* Rand in New Guinea, where otherwise only yellow-bellied forms occur.

The bright orange-bellied green-crowned birds of the Lesser Sunda Islands, which coexist with yellow-bellied ones, must be considered as a separate species (*solaris*). They are probably the result of an earlier invasion. I prefer to consider *büttikoferi*, from Sumba, as a race of *jugularis* on account of its yellow underparts. *N. asiatica* is evidently also an off-shoot of *jugularis*, completely saturated with melanin.

*N. lotenia*, with its very long curved bill, and its dark highly metallic coloration, is difficult to place. I have, however, no doubt that it is the highly specialized product of an early invasion from Africa, and that *N. dussumieri* is its nearest, if still distant, relative.

*N. fusca* is a curious regressive desert species, but it appears to be near the *venusta* group, as shown by the female plumage pattern and the white lower abdomen of the male, as well as by its general shape.

The bird described as *Cinnyris picta* by Hachisuka from Basilan (*Proc. Biol. Soc. Washington*, 54, p. 52, 1941), seems to be a hybrid between *N. jugularis jugularis* and *N. sperata juliae* (See Zimmer and Mayr, *Auk*, 60, p. 259, 1943).

## GROUP B.

In this group, birds vary from small to fairly large for the family. The tail is square, rounded or graduated. Males are always bright metallic green on the head, neck, mantle, throat. Underparts are gray, olive, or yellow, usually with a broad scarlet band across the chest, spreading to the greater part of the belly in two cases (*regia*, *rockefelleri*) and replaced by orange or olive yellow in two others (*loveridgei* and *vio-*

lacea). Females very plain, unmarked, gray to olive green, paler below than above.

All the males have pectoral tufts, which are absent in females. These sunbirds are purely African.

37. *N. chalybea*. Lesser Double-collared Sunbird. South Africa north to Angola and Lake Tanganyika.
38. *N. afra*. Greater Double-collared Sunbird. South and southeast Africa, to Angola, Lake Nyasa, Ruanda and Kivu Highlands, and Ruwenzori.
39. *N. mediocris*. East African Double-collared Sunbird. Highlands of Kenya and Tanganyika, south to Nyasaland.
40. *N. loveridgei*. Loveridge's Sunbird. Uluguru Mountains.
41. *N. preussi*. Mountain Double-collared Sunbird. High mountains of West Kenya, Ruwenzori, Kivu, Cameroon and Fernando Po.
42. *N. neergaardi*. Zambesi Double-collared Sunbird. Coast of southeast Africa, from northern Zululand to northern Portuguese East Africa.
43. *N. chloropygia*. Olive-bellied Double-collared Sunbird. West Africa and Fernando Po, to northern Angola, Uganda and southwestern Abyssinia.
44. *N. minulla*. Tiny Sunbird. Cameroon and Belgian Congo.
45. *N. regia*. Regal Sunbird. Ruwenzori and Kivu highlands, and Mt. Kungwe.
46. *N. rockefelleri*. Rockfeller's Sunbird. Mt. Kandashomwa, eastern Belgian Congo.
47. *N. violacea*. Wedge-tailed Sunbird. Western Cape Province to Little Namaqualand, South Africa.

#### NOTES:

All the species of this group with few exceptions resemble one another in such a way that it is difficult sometimes to distinguish them. A close study of the birds and of their geographical distribution enables one, however, to understand their relationships, which often have been confused.

*N. chalybea* is a moderate-sized bird with a comparatively narrow scarlet pectoral band and a very pale gray abdomen. The blue band on the upper breast and blue patch on the upper tail-coverts are reduced in size and of a steel blue; the latter is even absent in the race *intermedia* of Angola. They are southern birds of low or moderate altitudes. The recognizable races seem to be *chalybea*, *subalaris*, *zonaria*, *manoensis*, *gertrudis* and *intermedia*, but of some I have not been able to examine specimens.

*N. afra* is a bigger bird, with a longer, more graduated tail, a large bill, a wide scarlet band on the chest and a slightly

olive yellow darker shade on the abdomen. The blue of the chest-edging and the upper tail-coverts is more violet. Its green color is less golden. It is a bird of the lowlands or moderate elevation in south and southeast Africa (*afra*) and Angola (*ludovicensis*), with two mountain subspecies in central eastern Africa (*stuhmanni* and *graueri*). The last-named has a longer and more graduated tail than all the others. Quite independently, C. Grant and Mackworth-Praed (*Bull. B. O. C.*, LXIV, pp. 9, 10, 1943) have come to the same conclusions. Contrary to the opinion of several others, *N. chalybea intermedia* and *N. afra ludovicensis*, which occur together in Angola, are two very distinct birds.

*N. mediocris* occupies a central position, being smaller than *chalybea*, but larger than *preussi*. It has golden green upperparts, a steel blue band on the chest and upper tail-coverts, like *chalybea*, and strongly olive yellow lower breast and belly. It is a highland species of East Africa. Two subspecies, *mediocris* and *fülleborni*, occupy a large territory in E. Keya and in Tanganyika. According to C. Grant and Mackworth-Praed (*Bull. B. O. C.*, LXIV, p. 10, 1943) *N. m. usambarica* (Grote) is a synonym of *mediocris*, and *N. m. moreaui* a synonym of *fülleborni*. I have been unable to examine specimens of *moreaui*, and have seen only one of *usambarica*, which does not appear to differ appreciably from a series of *mediocris*.

I am also in accord with Grant and Mackworth-Praed in considering the very peculiar *N. loveridgei* as a separate species. The scarlet chest-band is replaced in this bird by a small central patch, gradually merging with the intense olive yellow which extends all over the lower parts. *N. loveridgei* has been considered at times a form of *mediocris* or of *regia*, but it is much too different, in both sexes, to be included in either species. (See Grant and Mackworth-Praed, *ibid.*, pp. 10, 11). The female of *loveridgei* is peculiar in having a slightly metallic gloss on the upperparts.

*N. preussi*\* is still smaller than *mediocris*, to which it is similar, but very bright and with a dark olive brown abdomen. The band on the chest and the upper tail-coverts are violet blue and the scarlet extends far down on the breast. It is a mountain bird confined to high ground in East Africa (*kikuyensis*), Fernando Po, and Cameroon (*preussi*, *genderuensis*).

\* *Cinnyris reichenowi* Sharpe, *Ibis*, 1891, p. 444, is antedated by *Drepanorhynchus reichenowi* Fischer, *Journ. f. Orn.*, 1884, p. 56, as both species are here included in the genus *Nectarinia*. The next available name for this species is *Cinnyris preussi* Reichenow, *Journ. f. Orn.*, 1892, p. 190: Mt. Cameroon. The East African subspecies must now be called *N. preussi kikuyensis* Mearns, *Proc. U. S. Nat. Mus.*, XLVIII, p. 388, 1915: Escarpment Station, Kenya.

*N. neergaardi*, which I have not been able to examine, seems to be very similar to *N. preussi*, but larger with a still darker abdomen. A lowland bird of the Southeast coast, it can scarcely be a representative of the montane species.

*N. chloropygia* is a small, widespread species resembling *preussi*, but with no blue band on the breast nor blue patch on the upper tail-coverts. It lives at low and moderate altitudes. Its recognizable races seem to be *kempi*, *chloropygia*, *insularis*, *lühderi* and *orphogaster*. The status of *binechensis* still remains doubtful.

*N. minulla* closely resembles *chloropygia*, with which it coexists in Cameroon and the eastern part of the Belgian Congo. It is smaller and the scarlet chest-band is slightly mottled with metallic blue, this effect being produced by a narrow subterminal blue band in the feathers. It has white instead of gray under wing-coverts.

*N. regia* is a little more like *mediocris*. It has a long, graduated tail; its underparts are bright scarlet in the middle, widely golden yellow at the sides and olive yellow on the lower abdomen; under tail-coverts scarlet; chest-band and upper tail-coverts violet blue. It is a high altitude bird.

From the eastern Belgian Congo another bird, *N. rockefelleri*, was described by Chapin in 1932. It is very near *regia* but differs in having the whole breast scarlet without yellow borders, and has a longer bill. It seems strange that two distinct species of such similar appearance can live on the same mountain (Mt. Kandashomwa, west of the Ruzizi Valley); but until more is known about it we must list *rockefelleri* as a full species.

*N. violacea* is the most aberrant of the group. It is highly specialized in its long tail and orange-yellow breast, but regressive in its dull olive lower back and tail. However, it belongs distinctly in the present group, as the female plumage shows.

#### GROUP C.

These sunbirds vary from small, square-tailed forms to large ones with long central rectrices. Males have extremely brilliant metallic colors, ranging from golden green to shiny violet and coppery red, with a black or metallic lower breast and abdomen. Females are gray or olive above, paler below, not at all or only faintly marked underneath.

The males of three species, *habessinica*, *bouvieri*, *osea*, are tufted. Members of this group inhabit Africa, Arabia, Palestine and southern Syria.

48. *N. habessinica*. Shining Sunbird. Red Sea Province, Abyssinia, Somaliland, northeastern Uganda, and southwestern Arabia.

49. *N. bouvieri*. Bouvier's Sunbird. Savannas of Loango Coast, Cameroon, northern and southern Congo, base of Ruwenzori and Uganda.

50. *N. osea*. Orange-tufted Sunbird. Southern Syria, Palestine, Arabia, Chad Territory, Darfur, Lado district of the Sudan and the northern Belgian Congo.

51. *N. cuprea*. Coppery Sunbird. Savannas from Senegal to Abyssinia, south to the Congo, Angola and Nyasaland.

52. *N. tacazze*. Tacazze Sunbird. Highlands of Eritrea, Abyssinia, Kenya Colony and Kilimanjaro.

53. *N. bocagei*. Bocage's Sunbird. Highlands of Angola.

54. *N. purpureiventris*. Purple-breasted Sunbird. Ruwenzori and Kivu Mountains.

#### NOTES:

It is mostly by the similar plumage of the females that these seven species show their affinities. The males vary greatly in colors, as could be expected of such bright birds.

The resemblance in color of *N. cuprea* and *N. tacazze* is extremely striking, and their great difference in size, as well as the elongated central rectrices of the male *tacazze*, are the main distinctions between them.

*N. bocagei* seems to be a dull, regressive offshoot of *tacazze*, while *N. purpureiventris*, which tops the group, is one of the most elaborately beautiful species of the whole family.

#### GROUP D.

This is another group of small and large species, short or long-tailed, much like the preceding one, to which it is closely related. Males also have very bright metallic colors, but always of different shades of green and blue above. Abdomen black or metallic. The females of the short-tailed species differ from those of Group C in being darker above and more or less strongly mottled below. Those of the long-tailed forms gradually become paler and plainer.

Males are without pectoral tufts except in three extreme species (*coccinigaster*, *famosa*, *johnstoni*). The female of *johnstoni* is the only tufted one of the whole subgenus. All species are Ethiopian.

55. *N. shelleyi*. Black-bellied Double-colored Sunbird. Lower Zambesi Valley to northern Rhodesia.

56. *N. bifasciata*. Purple-banded Sunbird. Southern and eastern Africa, north to the Loango Coast, Lake Edward, East

Africa, Zanzibar and Pemba Islands, Abyssinia and Eritrea.

57. *N. coccinigaster*. Splendid Sunbird. From Senegal through West African savannas to northern Belgian Congo; also Gaboon.
58. *N. erythroceria*. Red-chested Sunbird. Upper Nile Valley to Uganda, the country around Lake Victoria, and Congo Valley west to Lukolela.
59. *N. pulchella*. Beautiful Sunbird. Senegal to northern Nigeria, Abyssinia, Eritrea, Kenya Colony, southern Somaliland and northern Tanganyika Territory.
60. *N. famosa*. Malachite Sunbird. East and South Africa from Abyssinia to Cape Province (highlands).
61. *N. johnstoni*.\* Scarlet-tufted Sunbird. Mountains of Kenya Colony, Kilimanjaro, Ruwenzori and northern Nyasaland.

#### NOTES:

This group includes some of the most beautiful sunbirds. *N. shelleyi*, a species restricted to a rather small territory, is evidently related to *bifasciata*, and to some extent also to *habessinica* and to *neergaardi*. It lacks, however, the yellow pectoral tufts of both those species, and the female is mottled below, showing a close affinity to *N. bifasciata*.

*N. bifasciata* is a widespread and highly variable species. The small western race *bifasciata* reaches Lake Tanganyika, and is replaced along the coast of East Africa, up to southern Kenya Colony, by the almost identical *microrhyncha*, which is also present on Zanzibar Island. In South Africa and on the highlands of East Africa and Abyssinia live four larger subspecies: *mariquensis*, *suahelica*, *osiris* and *hawkeri*. All these forms have a definite dark red band on the breast between a violet band and the black belly. In the drier parts of coastal Kenya Colony and southern Somaliland one finds two races: *tsavoensis* and *chalomelas*. Although closely related to those just mentioned, they differ considerably in the purer black of the lower breast and abdomen, and in the absence of the dark red band. They have a wide bright violet band above the black lower parts.

The local race of Pemba Island, *pembae*, still accentuates this characteristic. It is bluer above and in its coloration matches almost completely the Grand Comoro form *möbii*, of the Madagascan species *N. notata*, a very much larger bird.

\* *Nectarinia johnstoni salvadorii* (*N. salvadorii* Shelley Bull. B.O.C., XIII, p. 61, 1903. Kachere, Nyasaland) is preoccupied by *Nectarinia sericea salvadorii* (*Cinnurus salvadorii* Shelley, Monogr. Sunbirds, p. 105, pl. 35, 1877. Jobi). I propose for it the new name: *Nectarinia johnstoni nyikensis*.

*N. coccinigaster*, one of the brightest species, suggests a glorified *N. bifasciata*. Females of both species are very similar.

The three other species of the group have elongated central rectrices, still fairly short in certain races of *erythroceria* and *pulchella*. I consider *congensis* as a subspecies of *erythroceria*, both sexes being generally similar. They have fairly long first primaries and no eclipse plumage.

The eastern and southern representatives of *N. pulchella* are *melanogaster*, *nectarinioides* and *erlangeri*. They differ mainly in their dull black instead of metallic green belly, the varying extent of yellow on the sides, and the length of the central rectrices. From the examination of good series, I have come to the conclusion that *melanogaster* and *nectarinioides* are probably conspecific, the latter representing a small, saturated form of *pulchella*, with short bill and tail. From all available information, I cannot find that the ranges of the two species really overlap. According to van Someren both have been found at Magadi, but this may have happened just at the limits of their respective habitats, where wandering birds might meet during the off-season in their search for flowering trees. It seems that *nectarinioides* is adapted to the semi-desert eastern country of southern Kenya Colony and northeastern Tanganyika Territory, while *melanogaster* prefers the less dry, open scrub and bush-velt to the west.

I agree with Grant and Mackworth-Praed (Bull. B.O.C., LXIV, p. 8, 1943) that *nectarinioides* is not so closely related to *erythroceria* as to *melanogaster*, but I do not think that it ought to be considered a valid species. It is true, however, that *nectarinioides* almost links the *pulchella* group with *erythroceria*, since its female approaches that of the latter species by its dark throat.

Grant and Praed are mistaken when they mention "tufts" in *pulchella*, *melanogaster* and *nectarinioides*. None of these sunbirds possesses any real pectoral tufts of erectile fluffy feathers. They merely have normal yellow feathers on the sides of the breast, which are few in number in *nectarinioides*. They are as completely devoid of pectoral tufts as *erythroceria*. The difference in the length of the first primary in *nectarinioides* and in *melanogaster* is proportionate to the size of the two birds; *erythroceria* and *congensis* have decidedly longer ones.

*N. famosa* is a much larger relative of *pulchella*, and *N. johnstoni* is a handsome high mountain form, in which the female is red-tufted like the male, a strange reappearance of a character found in some primitive species of the genus.



## GROUP E.

The birds of this last group are all large and very brightly colored. The males have either short, square tails or long rectrices. The short-tailed species are iridescent green above, the two long-tailed ones being coppery or bronze; the abdomen in all of them is black. The females differ from those of other groups in their yellow underparts streaked with dark olive gray. In two species (*superba* and *reichenowi*) these markings are faint; in the other four they are conspicuous. The female of *superba* is unusual in its orange under tail-coverts.

In only one species, *johannae*, the male has yellow pectoral tufts. These birds occur in Africa, Madagascar and the Comoro Islands.

62. *N. notata*. Angaladian Sunbird. Madagascar, Comoro Islands.
63. *N. johannae*. Johanna's Sunbird. West Africa from Sierra Leone to the Congo mouth, east to the Ituri district of the Belgian Congo.
64. *N. superba*. Superb Sunbird. West Africa from Sierra Leone to northern Angola and east to Uganda.
65. *N. kilimensis*. Bronzy Sunbird. Ituri highland, Uganda and Kenya Colony, south to Mashonaland and Angola.
66. *N. reichenowi*. Golden-winged Sunbird. Highlands of Kenya Colony and Uganda, south to Ngorongoro in Tanganyika Territory, west to the southern Kivu district.

## NOTES:

I have pointed out above the similiarity in color between the males of certain races of *N. notata* and *N. bifasciata*. On the other hand, females of *notata* resemble closely those of *N. johannae*, so that *notata* tends to link the two groups.

*N. superba*, with its gorgeous male and pale-bellied female, represents the extreme of a line of evolution, and is certainly close to *johannae*. These two species are the only ones of the subgenus *Nectarinia* to have a velvety dark red breast, suggestive of that found in the subgenus *Leptocoma*, particularly in some races of *N. sperata*.

Males of *N. kilimensis*, long-tailed and coppery green in color, are very different from those of the foregoing species, but the general similarity of the females shows their relationship.

The female of *N. reichenowi* resembles that of *kilimensis* in shape and color. The strongly curved bill of *reichenowi* is almost matched by that of *N. kilimensis arturi*. This evident proof of near relationship between the two species makes it impossible to admit generic distinction (*Drepanorhynchus*) for *reichenowi*. This wonderful

species, in which both sexes have the rectrices, primaries and secondaries bordered with golden yellow, represents the most specialized and elaborate form of the group, and perhaps of the whole genus.

III. GENUS *Neodrepanis*.

The small Madagascan sunbirds of this genus are remarkable in the large fleshy blue wattle around the eye of the breeding male and in the shape of the first primary. This feather is extremely long, scarcely shorter than the second, which equals the seventh in length, the third to fifth being the longest; and it is emarginate at the tip. The tail is extremely short and soft. The bill is very long and strongly curved, with very slight serrations on the lower mandible and none on the upper one.

In both species, which are closely related, there is an eclipse plumage in the males, which in breeding dress are dark metallic blue above and yellow below. Females and off-season males are olive green above, yellow mixed with olive brown below. On account of its form, size and color pattern, *Neodrepanis* seems clearly connected with *Nectarinia*, particularly the subgenus *Cyanomitra*. There are no pectoral tufts. The genus is confined to Madagascar.

1. *N. hypoxantha*. Slender-billed Wattled Sunbird. Highlands of central eastern Madagascar—probably extinct.
2. *N. corruscans*. Wattled Sunbird. Eastern Madagascar at moderate altitudes.

## NOTES:

F. Salomonsen has contributed an important paper on the sunbirds of this genus. (*L'Oiseau*, 1934, pp. 1-9, col. pl.).

IV. GENUS *Aethopyga*.

The sunbirds of this genus differ considerably from those of the three preceding genera in the structure of their tongue, which shows a flat terminal lobe between two semi-cylindrical ones. They possess that important characteristic in common with the following genus, *Arachnothera*, from which they differ, however, in other structural features. All species of *Aethopyga* are small. They have a rather short and curved bill, longer however than the head, and variable, with a distinctly ridged culmen. Nasal operculum bare. Wing rounded; the first primary short; third, fourth and fifth the longest. Tail rounded to much graduated; the central rectrices pointed in several species, very long in others. Males possess metallic colors, but they are never extensive, and are confined to the whole or portions of the head, neck, throat

VARIATIONS OF COLORS OF BREAST AND LOWER BACK IN MALES,  
*Aethopyga gouldiae*, *Ae. nipalensis* and *Ae. saturata*.

SPECIES AND SUBSPECIES	GEOGRAPHICAL DISTRIBUTION	COLOR OF BREAST				COLOR OF LOWER BACK	
		Yellow	Red Streaked Yellow	Red	Black	Yellow	Not Yellow
<b><i>Aethopyga gouldiae</i></b>							
<i>gouldiae</i>	E. Himalaya, W. Burma		I			I	
<i>isolata</i>	S. W. Burma	I				I	
<i>annamensis</i>	S. Indo-China	I					I
<i>harrietae</i> , } <i>dabryi</i> }	E. Burma, N. Siam, N. Indo-China, S. C. W. China			I		I	
<b><i>Aethopyga nipalensis</i></b>							
<i>nipalensis</i> , } <i>victoriae</i> , } <i>australis</i> }	E. Himalaya, Burma, W. Yunnan, Tonking, Malay Peninsula		I			I	
<i>horsfieldi</i>	W. Himalaya	I*				I	
<i>blanci</i>	C. Laos		I				I
<i>ezrai</i>	S. C. Annam	I					I
<i>angkanensis</i>	N. W. Siam			I		I	
<b><i>Aethopyga saturata</i></b>							
<i>saturata</i> ,	Himalaya, N. Burma, W. Yunnan				I	I†	
<i>sanguinipectus</i> , } <i>wrayi</i> }	S. E. Burma, S. E. Yunnan, N. Siam, N. C. and W. Indo-China; Malay Peninsula		I			I	
<i>anomala</i>	Peninsular Siam		I				I
<i>johnsi</i>	S. Annam			I		I	

\* Some specimens show a few faint red streaks.

† Many specimens have a small yellow patch, others none.

and tail, and, exceptionally, to the wing-coverts. In the most primitive species, *boltoni*, there are only faint traces of metallic sheen on the crown and tail. The sides of the head are never metallic. There is always a good deal of silky red or olive yellow in the plumage. The lower back is usually bright yellow; but this patch disappears in certain subspecies of *saturata*, *nipalensis*, and *gouldiae*, and in *flagrans*. A very important and characteristic feature of the genus is the long, fluffy feathers of the sides of the lower back. There are no pectoral tufts. Females are dull olive above, with a grayish hood in several species.

The species of *Aethopyga* are found from India to central and southeastern China, the Philippines, Sumatra, Java, Borneo, Sanghir Island and Celebes.

1. *Ae. boltoni*. Mindanao Sunbird. Mindanao.
2. *Ae. flagrans*. Flaming Sunbird. Northern Philippines (Luzon, Negros, Panay, etc.).
3. *Ae. pulcherrima*. Sharpe's Sunbird. The Philippines.

4. *Ae. duyvenbodei*. Duyvenbode's Sunbird. Sanghir Island.
5. *Ae. shelleyi*. Lovely Sunbird. Palawan and the Philippines.
6. *Ae. gouldiae*. Mrs. Gould's Sunbird. The Himalayas, Assam, Burma, Siam, central and southern China, Indo-China.
7. *Ae. nipalensis*. Yellow-bellied Sunbird. East Himalaya, Assam, Burma, Siam, Indo-China, southern China, Malay Peninsula (mountains).
8. *Ae. eximia*. Kuhl's Sunbird. Java.
9. *Ae. christinae*. Sharp-tailed Sunbird. Southeastern China, eastern Indo-China, Hainan.
10. *Ae. saturata*. Black-breasted Sunbird. The Himalayas, Burma, Siam, Yunnan, Indo-China, Malay Peninsula.
11. *Ae. siparaja*. Yellow-backed Sunbird. From India to southern China, Siam, Indo-China, Philippines, Malay Peninsula, Sumatra, Java, Borneo, Celebes.
12. *Ae. mystacalis*. Scarlet Sunbird. Malay Peninsula, Sumatra, Borneo, Java.

13. *Ae. ignicauda*. Fire-tailed Sunbird.  
Himalaya, Assam, Burma, Yunnan.

## NOTES:

The simplest forms of *Aethopyga* are found in the Philippines. *Ae. boltoni* has a graduated tail and a yellow back, but the metallic sheen on the dark gray crown is hardly noticeable.

*Ae. flagrans*, rightly ascribed by Oustalet to *Aethopyga*, has since been wrongly placed in the genus *Cinnyris* (*Nectarinia*) by several authors. It is difficult to account for such a mistake, as it has all the important characteristics of *Aethopyga*, particularly the texture of the plumage. The alleged resemblance to *Nectarinia jugularis aurora* is entirely superficial. *Ae. flagrans* has a metallic crown, chin and tail, but lacks the yellow patch on the lower back and has a rounded tail.

*Ae. pulcherrima* has broad metallic borders to all the wing-feathers except the primaries, a feature which it shares with *Ae. duyvenbodei*, and a short, almost square tail. *Ae. duyvenbodei*, however, is closely allied to *Ae. shelleyi* in its general color pattern.

The small Philippine forms usually referred to *bella* are conspecific with *Ae. shelleyi* from Palawan, which is merely larger and more highly colored, and has a longer tail.

*Ae. gouldiae* is certainly the continental representative of the preceding species, larger and brighter, with a very long tail. *Ae. dabryi* and *Ae. harrietae*, from China and northern Indo-China, which have red breasts, are nothing but subspecies of *gouldiae*. *Ae. g. annamensis*, from South Annam and South Laos, lacks the yellow patch on the lower back. Both *Ae. gouldiae* and *Ae. shelleyi* have very small bills.

*Ae. nipalensis* also has two Indo-Chinese races with no yellow patch on the lower back (*ezrai* and *blanci*), both very rare and found on high mountains. On the isolated mountain of Doi Angka, in Siam, lives the peculiar race *angkanensis* with an unstreaked grenadine red chest. *Ae. n. ezrai* and *horsfieldi* have it plain yellow, while all other forms have a yellow chest streaked with red to a greater or lesser degree. The amount of maroon red on the upper back varies considerably.

*Ae. eximia* and *Ae. christinae* show a certain agreement in colors.

*Ae. saturata* includes *Ae. sanguinipectus* and its allies as subspecies. Typical *saturata* often lacks the yellow patch on the lower back, or has it much reduced, while *anomala* from peninsular Siam has none. The form *johnsi*, isolated on the Langbian highlands of Southern Annam, is the most distinct of all the subspecies of *saturata*, having

even been considered often as a full species. It is small in size, with a comparatively short tail; the black pectoral band is almost absent, and the whole chest is grenadine red faintly streaked with yellow.

In the species *gouldiae*, *nipalensis* and *saturata*, isolation in highland areas favors variation in the color of breast and back. Yet when two or more of the species live together in the same locality they do not exhibit any parallelism in these respects. Curiously enough, when males lack the yellow rump-patch, females of the same race appear to retain it (*Ae. saturata anomala*, *Ae. nipalensis blanci*, *Ae. gouldiae annamensis*).

*Ae. siparaja* is a common and widespread lowland species found from southern and western India (*vigorsi*) throughout Burma, South China, Siam, Indo-China and the Malay countries, to the Philippines (*magnifica*) and Celebes (*flavostriata*).

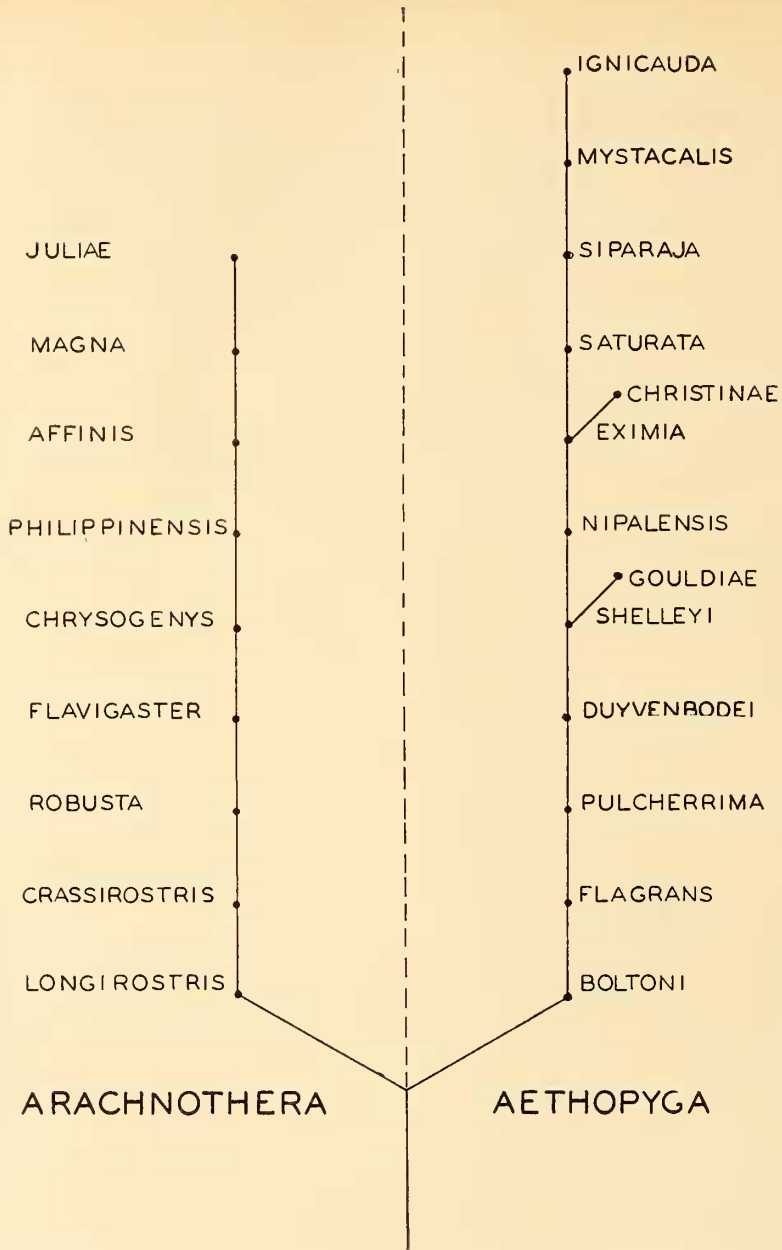
*Ae. mystacalis* and *Ae. temmincki* are conspecific in spite of the difference in the color of their long rectrices (glossy violet and vermilion scarlet). *Ae. ignicauda*, remarkable for its long vermilion red tail, is the only species of the genus to have an eclipse plumage.

V. GENUS *Arachnothera*.

The birds of this genus differ considerably from all other sunbirds, but they are nearest to *Aethopyga*. They are large and coarse with a massive body, a short, rounded tail; they have a long and very strong bill, short tarsi but powerful toes and sharp nails. Nostrils naked, and wings as in *Aethopyga*. They show no metallic colors in the plumage, which is olive, gray, and yellow—brown in one case. Three species possess pectoral tufts in the males. Their tongue is similar to that of *Aethopyga*, and they also have long, fluffy feathers on the sides of the lower back. In their diet, these birds are much more insectivorous, less nectar-sucking, than the other sunbirds.

*Arachnothera* is an Indo-Malayan genus. Two species extend to India, Siam, Burma and Indo-China, while others barely reach the extreme south of some of these countries. It is also represented in the Philippines, but the Malaysian region is its stronghold.

1. *A. longirostris*. Little Spider-hunter. India, Burma, Yunnan, Siam, Indo-China, Malay Peninsula, Sumatra and neighboring islands, Borneo, Java, Palawan, Philippines.
2. *A. crassirostris*. Thick-billed Spider-hunter. Malay Peninsula, Sumatra, Borneo.



TEXT-FIG. 14. Species of the Genera *Arachnothera* and *Aethopyga*.

3. *A. robusta*. Long-billed Spider-hunter. Malay Peninsula, Sumatra, Borneo, Java.
4. *A. flavigaster*. Great Yellow-eared Spider-hunter. Cochin-China, Malay Peninsula, Sumatra, Borneo.
5. *A. chryso genys*. Yellow-eared Spider-hunter. Tenasserim, Peninsular Siam, Cochin-China, Malay Peninsula, Su-

- matra and neighboring islands, Borneo, Java.
6. *A. philippinensis*. Naked-faced Spider-hunter. Philippines.
7. *A. affinis*. Gray-breasted Spider-hunter. Tenasserim, Peninsular Siam, Cochin-China, Malay Peninsula, Sumatra, Borneo, Java, Bali.
8. *A. magna*. Streaked Spider-hunter.

Himalaya, Assam, Borneo, Yunnan, Siam, Indo-China, Malay Peninsula.

9. *A. juliae*. Whitehead's Spider-Hunter. Borneo (mountains).

#### NOTES:

The first three species are the nearest to the other sunbirds. The males have orange pectoral tufts, and the feathers on the sides of the lower back are very long and fluffy. The species *longirostris*, the smallest, with a slim but very long bill, is the most widespread; *diluta* from Palawan and *flammifera* from the Philippines are among its subspecies.

*A. flavigaster*, *chrysogenys* and *philippinensis* are well differentiated species.

*A. affinis*, *magna* and *juliae* are certainly related and very similar in shape and size, but constitute separate species, although *juliae* is the representative of *magna* on the high mountains of Borneo and belongs to the same superspecies. But it is too different in its color pattern (brown streaked with white, and golden yellow on under tail-coverts) to be considered a subspecies of *magna*. *A. affinis* coexists with *magna* in the Malay Peninsula and Tenasserim.

#### ECLIPSE PLUMAGE.

In a certain number of species of sunbirds, males have a double annual molt and take on a dull plumage resembling that of the females, keeping it for a period of several months after the breeding season. The presence or absence of this eclipse plumage seems to have little systematic significance, since it varies in closely allied forms, even in different subspecies of the same species. It appears that birds from the dry and colder parts, where sharply contrasted seasons alternate, often possess an eclipse plumage. Those living near the equator in tropical forests seldom show it. But there are certainly many exceptions to the rule.

Comparatively little is known on the subject. The study of museum collections is of help only in the case where it is certain that males are molting from bright into dull dress. The occurrence in a series of many males in transition plumage may only mean that a number of young birds, just assuming their adult dress, have been secured. I myself have been almost misled by a large series of *Aethopyga gouldiae harrietae*, collected in Laos during the months of November and December, 1938. I had good reason to believe that our very numerous males in transition plumage meant that this form had an eclipse dress. But the observation of captive specimens living in my tropical conservatory at

Clères, proved that it had none. Careful and prolonged observation of live birds at liberty or in captivity, under suitable conditions, can make certain that a seasonal eclipse plumage is assumed by a given form. We still are in doubt as to many species and subspecies. As an encouragement for further investigations, I am giving here the list of records which are definitely established, by my personal observations and by those of reliable naturalists.

#### I. SPECIES OF SUNBIRDS IN WHICH THE MALE HAS AN ECLIPSE PLUMAGE.

- Anthreptes platara*  
*Nectarinia amethystina amethystina*  
 " *lotenia*  
 " *jugularis*  
 " (Indo-Malayan races)  
 " *asiatica*  
 " *souimanga*  
 " ? *venusta kuanzae*\*  
 " *fusca*  
 " *afra* (southern races)  
 " *chalybea*  
 " *cuprea*  
 " *pulchella*  
 " *famosa*  
 " *reichenowii*  
*Neodrepanis hypoxantha*  
 " *coruscans*  
*Aethopyga ignicauda*

#### II. SPECIES OF SUNBIRDS HAVING NO ECLIPSE PLUMAGE.

- All *Anthreptes* except *platara*  
 All *Nectarinia* of the subgenera *Cyanomitra*, *Chalcomitra* (except *N. a. amethystina*), *Leptocoma*  
*N. venusta* (except *kuanzae*)  
*N. medicris*  
*N. chloropygia*  
*N. minulla*  
*N. violacea*  
*N. tacaze*  
*N. bifasciata*  
*N. erythroceria*  
*N. notata*  
*N. coccinigaster*  
*N. johannae*  
*N. superba*  
*N. kilimensis*

All *Aethopyga* (except *Ae. ignicauda*)

All *Arachnothera*

The occurrence of an eclipse plumage in all other species remains unrecorded.

\* In a large series in the American Museum, collected by Anson in July and August, not a single male is in breeding plumage.

† The eclipse plumage of this species is partial: the male retains its yellow wings and tail, but the coppery lustre of its head, neck, upper back and breast is replaced by a dull black.

## ALPHABETICAL LIST OF GENERIC NAMES.

In **bold face**, valid genera; in SMALL CAPITALS, subgenera; in *italics*, synonyms.

- Adelinus* Bonaparte, 1854. (*N. verreauxi*) = *Nectarinia*.
- Aethocinnyris* A. Roberts, 1922. (*N. afra*) = *Nectarinia*.
- Aethopyga** Cabanis, 1850. (*Ae. siparaja*).
- Aidemonia* Reichenbach, 1854. (*N. cuprea*) = *Nectarinia*.
- Anabathmis* Reichenow, 1905. (*N. reichenbachii*) = *Nectarinia*.
- Anagaladiana* Reichenbach, 1854. (*N. notata*) = *Nectarinia*.
- Anthobaphes* Cabanis, 1850. (*N. violacea*) = *Nectarinia*.
- Anthodiaeta* Cabanis, 1850. (*A. collaris*) = *Anthreptes*.
- Anthophagana* Strand, 1928. (*N. olivacea*) = *Nectarinia*.
- Anthophagus* Jennings, 1829. (*N. olivacea*) = *Nectarinia*.
- Anthothreptes* Cabanis, 1850. (*A. malacensis*) = *Anthreptes*.
- Anthreptes** Swainson, 1837. (*A. malacensis*).
- Arachneethra* Cabanis, 1850. (*N. lotenia*) = *Nectarinia*.
- Arachnocestra* Reichenbach, 1854. (*A. crassirostris*) = *Arachnothera*.
- Arachnophila* Salvadori, 1874. (*A. simplex*) = *Anthreptes*.
- Arachnoraphis* Reichenbach, 1854. (*A. flavigaster*) = *Arachnothera*.
- Arachnothera** Temminck, 1826. (*A. chrysogenys*).
- Baptothorax* A. Roberts, 1922. (*N. senegalensis gutturalis*) = *Nectarinia*.
- Carmelita* Reichenbach, 1854. (*N. fuliginosa*) = *Nectarinia*.
- CHALCOMITRA Reichenbach, 1854. (*N. amethystina*) subgenus of *Nectarinia*.
- Chalcoparia* Cabanis, 1850. (*A. phaenicotis*) = *Anthreptes*.
- Chalcostetha* Cabanis, 1850. (*N. chalcostetha*) = *Nectarinia*.
- Chromotophora* Reichenbach, 1854. (*N. superba*) = *Nectarinia*.
- Cinnyris* Cuvier, 1817. (*N. superba*) = *Nectarinia*.
- Cinnyricinclus* Lesson, 1840. (*A. longuemarei*) = *Anthreptes*.
- CYANOMITRA Reichenbach, 1854. (*N. verticalis cyanocephala*) subgenus of *Nectarinia*.
- Cyrstostomus* Cabanis, 1850. (*N. jugularis*) = *Nectarinia*.
- Drepanorhynchus* Fischer and Reichenow, 1854. (*N. reichenowi*) = *Nectarinia*.
- Dreptes* Reichenow, 1914. (*N. thomensis*) = *Nectarinia*.
- Duyvena* Mathews, 1925. (*Ae. duyvenbodei*) = *Aethopyga*.
- Eleocerthia* Reichenbach, 1858. (*N. verreauxi*) = *Nectarinia*.
- Eremicinnyris* A. Roberts, 1922. (*N. fusca*) = *Nectarinia*.
- Euchoridia* Reichenbach, 1854. (*A. rectirostris*) = *Anthreptes*.
- Eucinnyris* A. Roberts, 1922. (*N. venusta talatala*) = *Nectarinia*.
- Eudrepanis* Sharpe, 1877. (*Ae. pulcherrima*) = *Aethopyga*.
- Gunningia* A. Roberts, 1922. (*A. reichenowi*) = *Anthreptes*.
- Haagneria* A. Roberts, 1925. (*N. olivacea*) = *Nectarinia*.
- Hedydipna* Cabanis, 1850. (*A. platura*) = *Anthreptes*.
- Helionympha* Oberholser, 1905. (*N. pulchella nectarinioides*) = *Nectarinia*.
- Hermotimia* Reichenbach, 1854. (*N. sericea*) = *Nectarinia*.
- Hypogramma* Reichenbach, 1854. (*N. hypogrammica*) = *Nectarinia*.
- Lamprothreptes* A. Roberts, 1922. (*A. longuemarei*) = *Anthreptes*.
- LEPTOCOMA Cabanis, 1850. (*N. sperata braziliانا*) subgenus of *Nectarinia*.
- Leucochloridia* Reichenbach, 1858. (*N. verticalis*) = *Nectarinia*.
- Mangusia* Bonaparte, 1854. (*A. rectirostris*) = *Anthreptes*.
- Maricornis* A. Roberts, 1922. (*N. bifasciata mariquensis*) = *Nectarinia*.
- Microcinnyris* A. Roberts, 1922. (*N. chalybea*) = *Nectarinia*.
- Nectarinia** Illiger, 1811. (*N. famosa*).
- Nectarophila* Reichenbach, 1854. (*N. sperata braziliانا*) = *Nectarinia*.
- Neodrepanis** Sharpe, 1875. (*N. coruscans*).
- Notiocinnyris* A. Roberts, 1922. (*N. afra*) = *Nectarinia*.
- Panaeola* Cabanis, 1850. (*N. pulchella*) = *Nectarinia*.
- Platyidipna* Cabanis, 1850. (*A. platura*) = *Anthreptes*.
- Sclaterornis* A. Roberts, 1922. (*N. kilimensis arturi*) = *Nectarinia*.
- Shelleyia* A. Roberts, 1922. (*N. shelleyi*) = *Nectarinia*.
- Tephrolaema* Heine, 1860. (*A. rectirostris tephrolaema*) = *Anthreptes*.
- Urodrepanis* Shelley, 1876. (*A. christinae*) = *Aethopyga*.